

# First ARP in the U.K.

## Background

In the spring of 2001 Stork Thermeq / Colibri installed the first Ammonia-Water based Absorption Refrigeration Plant (ARP), as part of a co-generation package, at Banham Poultry, Attleborough, United Kingdom. The co-generation plant with one engine and a total electrical power production of 2 MW<sub>e</sub> supplies the thermal energy to drive the ARP. A glycol / water solution is cooled down to -13 °C. This unit from the ARP-M-AD series is the first one in its kind with integrated cooling towers for the condensor as well as for the absorber.

## The project

### *Banham Poultry : a brief company profile*

Banham Poultry Limited produces high quality fresh British chicken for major supermarket chains and wholesale markets. Chicken is produced to the highest standards of food safety and welfare (HACCP & HAS implemented throughout). The company was established by the Foulger family in the early 1900's and has operated under their control ever since. Over 500 people are employed within the company. The processing factory is situated in Attleborough and is a major employer in the area. Company owned broiler growing and breeding farms are situated across East Anglia.

In the night of August 3rd 1998 offices and processing plant of Banham Poultry were destroyed in one of the most destructive fires the region had ever seen.

Banham Poultry's farm and transport depot were both untouched by the fire and this helped the company to make a quick decision to continue operations-albeit on a considerably reduced scale. This was achieved thanks to the kindness and understanding of local competitors who allowed

Banham Poultry to use their facilities at night in order to get at least a few of its birds through.

The rebuilding began on August 17th, and on January 4th 1999 the new processing plant was in full commercial operation.

Stork Thermeq and Colibri were chosen by Banham Poultry because of their flexibility in technical implementation of their new concept in the existing refrigeration plant. The innovative character of the Stork Thermeq / Colibri ARP unit and the interest Banham Poultry has in new developments was the driving energy to a successful project.

Banham Poultry has always been one of the most forward-looking companies in the industry – even before the fire. The proof of this attitude is the decision to install a co-generation package where cold is generated by an Absorption Refrigeration Plant, driven by hot water coming from the engine. With this package Banham Poultry is the first in the UK with a unique ARP concept.



*Banham Poultry, Attleborough, Norfolk, UK*

**Stork Thermeq B.V**

## Unique aspects

The Absorption Refrigeration Plant has been integrated in the existing vapour compressor system. The unique aspect in this system is that an evaporative absorber and condenser have been installed. An expensive and space consuming cooling tower installation is no longer required. The two Baltimore evaporative coolers consume softened suppletion water.

The ARP consists of two parts, i.e. one skid containing all the equipment except for the Baltimore evaporative coolers. The work at site is limited to installing the steelstructure for the Baltimore's, the inter-connecting piping and the completion of the cabling.

Technical specification of the ARP:

- Model ARP-M5-AD
- Refrigeration capacity 500 kW
- Evaporation temperature - 16 °C
- Driving energy hot water  
125 °C/115 °C
- Electrical consumption 65 kW
- Dimensions (l x w x h) 3,4 x 3 x 8 m  
(excl. Cooling towers)



*view of the indoors part of the installation*



*view of the two Baltimore evaporative coolers*

## About Stork Thermeq

Stork Thermeq is a specialist on boiler systems. We aim to leverage our expertise in order to be the best partner for our customers in the field of tailor-made design, production, construction and maintenance for combustion, deaerating, condensate and absorption refrigeration systems. With a focus on speed and flexibility we are a leading supplier of state of the art components for boiler systems for utilities and the process industry. By combining the energetic characteristics of our independent operating company and the back-up of our parent company Stork N.V., our customers have the best of both worlds.

We consider satisfied customers, motivated employees, quality and sound financial performance the core values for the successful continuity of our company.

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